

CLAIMS

What is claimed is:

1. A method for generating an infectious clone based on the genome of a positive strand RNA virus, said method comprising producing a recombinant nucleic acid comprising at least one full-length DNA copy or in vitro-transcribed RNA copy or a derivative of either whereby the RNA virus has a genome of at least about 15 kb.
2. A method for generating an infectious clone based on the genome of an RNA virus, said method comprising producing a recombinant nucleic acid comprising at least one full-length DNA copy or in vitro-transcribed RNA copy or a derivative of either and further comprising selecting infectious clones by transfecting a host cell with said recombinant nucleic acid whereby said host cell is in essence not susceptible to infection with said virus.
3. A method according to claim 2 whereby said virus is a positive strand RNA virus with a genome of at least about kb.
4. A method according to claim 2 or 3 whereby said host cell is a BHK-21 cell
5. A recombinant nucleic acid comprising an infectious clone obtainable by a method according to any one of claims 1 to 4
6. A recombinant nucleic acid according to claim 5 comprising an infectious clone based on the genome of a virus selected from any of the Nidovirales.
7. A recombinant nucleic acid according to claim 6 comprising an infectious clone based on the genome of a virus selected from any of the Artiriviridae.
8. A recombinant nucleic acid according to claim 7 wherein said virus is PRRSV.

9. A recombinant nucleic acid molecule according to any of claims 5 to 8 wherein a nucleic acid sequence encoding a virulence marker and/or a serological marker has been 38 modified.
10. A recombinant nucleic acid molecule according to claim 9 wherein the nucleic acid sequence encoding said marker is located within any of the open reading frames encoding structural viral proteins.
11. A recombinant nucleic acid molecule according to claim 10 wherein one open reading frame is ORF7 of any of th Arteriviridae .
12. A recombinant nucleic acid molecule according to any of claims 5 to 8 wherein one open reading frame is substituted by an ORF7 of the Arteriviridae.
13. A recombinant nucleic acid molecule according to any of claims 5 to 12 wherein at least one additional heterologous nucleic acid sequence is inserted.
14. A recombinant nucleic acid molecule according to claim 13 wherein said heterologous nucleic acid sequence encodes an antigen.
15. A recombinant nucleic acid molecule according to any of claims 5 to 14 wherein an open reading frame has been modified.
16. A modified RNA virus comprising a recombinant acid according to any of claims 5 to 15.
17. A vaccine comprising a modified RNA virus according to claim 16.
18. A cell infected with a modified RNA virus according to claim 16.

19. A protein and/or antigen obtained from a cell culture according to claim 18.
20. A diagnostic assay using a protein and/or antigen according to claim 19.
21. An isolated polynucleotide molecule comprising a DNA sequence encoding an infectious RNA molecule encoding a United States strain PRRS virus.
22. An isolated polynucleotide molecule comprising a DNA sequence encoding an infectious RNA molecule encoding a PRRS virus selected from the group consisting of PRRS virus strains ATCC VR 2332, ATCC VR 2385, ATCC VR 2386, ATCC VR 2429, ATCC VR 2474, and ATCC VR 2402.
23. A transfected cell comprising a DNA sequence encoding an infectious RNA molecule encoding a PRRS virus selected from the group consisting of PRRS virus strains ATCC VR 2332, ATCC VR 2385, ATCC VR 2386, ATCC VR 2429, ATCC VR 2474, and ATCC VR 2402, which transfected cell is capable of expressing the encoded PRRS virus.
24. An isolated polynucleotide molecule in the form of a plasmid, wherein said isolated polynucleotide molecule comprises a DNA sequence encoding an infectious RNA molecule encoding a PRRS virus selected from the group consisting of PRRS virus strains ATCC VR 2332, ATCC VR 2385, ATCC VR 2386, ATCC VR 2429, ATCC VR 2474, and ATCC VR 2402.
25. An isolated infectious RNA molecule encoded by an isolated polynucleotide molecule, which infectious RNA molecule encodes a PRRS virus selected from the group consisting of PRRS virus strains ATCC VR 2332, ATCC VR 2385, ATCC VR 2386, ATCC VR 2429, ATCC VR 2474, and ATCC VR 2402.

26. A recombinant PRRS virus encoded by an isolated polynucleotide molecule comprising a DNA sequence encoding an infectious RNA molecule encoding a PRRS virus selected from the group consisting of PRRS virus strains ATCC VR 2332, ATCC VR 2385, ATCC VR 2386, ATCC VR 2429, ATCC VR 2474, and ATCC VR 2402.

27. An isolated polynucleotide molecule comprising a DNA sequence encoding an infectious RNA molecule encoding a PRRS virus wherein said PRRS virus comprises ORF7 protein of ATCC VR2332.